INCIDENT BASE RECYCLING GUIDE

Forest Service Waste Reduction and Recycling Program

Revised 6/21/99

Introduction

Incidents such as fires often create small communities that purchase and consume products, and generate waste. If we can recycle at incident camps, we can help promote the Forest Service mission to advocate a conservation ethic. At any incident, the Incident Team works for the local line officer of the agency that manages the lands where the incident is located. Therefore, it is up to that line officer to work with the Incident Commander to determine whether recycling will be a part of the team's accomplishments during the incident.

This guide is intended to provide information for establishing, supplying, and implementing a recycling collections system at any incident. If the incident is located on a National Forest, there should be a recycling coordinator at the local Forest Service office that can help provide information, if not serve as the incident recycling specialist or liason. That person should have laid a lot of groundwork and you may be able to skip steps 1 and 2 (maybe even 3). If there is not a recycling coordinator or specialist, this guide provides the information on how to establish, maintain and demobilize an incident recycling program.

1. Determine if recycling is an option .

Before any recycling program is established, the first step should be to determine if recycling is possible. Check into the following:

*** Are there ANY recycling services in the nearest community?** A local phone book can give you the names of commercial recyclers or service organizations that may be interested in handling your recyclables. Some communities are so isolated that there are no recycling services. Or, your incident base may be located in such a remote location, the nearest recycler could be very far away. **DON'T ATTEMPT TO ESTABLISH RECYCLING UNTIL YOU KNOW YOU HAVE A PLACE FOR THE RECYCLABLES TO GO.**

2. Determine what items are recyclable and how they will be disposed.

* Determine which items are considered "reuseable government property" and which items are considered "garbage" that could be recycled. **This is important - see** Appendix B for these definitions. Once you determine which items are recyclable, determine how you will dispose of them using the following methods in order of preference:

A. Sell to a recycler. Current sale requirements state that proceeds be returned to the Treasury as miscellaneous receipts. The Government should keep the proceeds if it originally bought the property (salvage value) or incurred costs of collection/disposal. NOTE: There is new legislation (P.L. 103-329) which may give the local unit the ability to collect sales proceeds AND use this money to offset costs of the recycling program operation--the WO is working on direction for implementing this legislation and will have new info soon.

B. Give to a recycler or organization willing to dispose of collection through recycling. We would hope that the Government could minimize handling expense by letting the "donee" cover the costs of pick up

and delivery to the recycler--however, this is not a requirement. "Giving" the recyclables away is done through "abandonment" procedures outlined in Federal Property Management Regulations (41 CFR 101-45). Read Appendix B and consult with a local Property Management Officer who will document this method.

C. Pay for recyclables disposal Paying for this service is similar to normal garbage waste removal, except that the garbage quantity removed (and hopefully associated costs) are reduced by the amount diverted for recycling purposes.

In general, handling recyclables should be done in the most cost-effective, reasonable manner given your local markets and resources to avoid incineration or landfill disposal. Authorized by the direction in Executive Order 13101, we do what is reasonable to accomplish this conservation objective.

3. Establish who will be responsible for recycling at the incident

The person who oversees recycling operations at an incident is not always predetermined. If you are at a National Forest, find out who the Forest or District Recycling Coordinator is. That person may be assigned by the local line officer to oversee recycling operations at an incident because they have the most information about local recyclers, materials collected, etc. However, sometimes that person serves only as a liason for information and initial contacts, and can not be at the incident location. If this is the case, the incident's recycling coordinator will have to be someone assigned to the incident. Ideally, this person should be located at the incident, especially during initial set-up of the operation.

Responsibilities for incident recycling fall within the Logistics branch, most likely under the Facilities Unit Leader. The recycling coordinator should be responsible for:

a. Establishing and maintaining a SAFE and effective incident recycling operation.
b. Ordering and establishing recycling collection facilities and associated supplies.
c. Determining who will accept and/or transport the recyclables (with assistance from local recycling coordinator if available).
d. Determining how many people will be needed to assist with the operation.
e. Coordinating with and briefing the Food, Supply, Communications, Facilities and Ground Support Unit Leaders.
f. Briefing the Overhead Team about the program and minimizing any impact to the team's operation in accomplishing its mission.
g. Informing incident base personnel and fire crews of the recycling program.
h. Demobilizing the Incident Recycling Program supplies and personnel.

4. Determine how the recycler wants the materials prepared and how they will be transported.

* What materials will they accept? Consider cardboard, glass, tin cans, aluminum cans and foil, scrap metal, polystyrene, plastic containers (pop bottles--#1 PETE and milk jugs--#2 HDPE are most common), paper (white, colored or computer), newspaper, magazines, cooking grease, motor oil, batteries (see Appendix B for details on recycling all these items). Be sure to find out their office hours if you end up transporting recyclables to the recycler.

*** How do they want them prepared?** Do items need to be rinsed? Crushed? Have labels removed? Be separated from similar items? Be in boxes, bundles or bags? Be wrapped with twine or tape? Most

recyclers want recyclables sorted well but some will accept certain items mixed together. ASK FOR DETAILS OR YOU MAY END UP HAVING ENTIRE LOADS OF RECYCLABLES REJECTED (see Appendix B for more details on types of materials and typical preparation).

*** Who will transport them?** Will the recycler or organization pick them up or will they need to be transported? If a contract is arranged with a recycler, try to include transport as a service. If you must transport them, order adequate truck and/or trailer transportation through Ground Support. Another option is to coordinate with the Supply Unit or Ground Support to backhaul the recyclables in empty supply trucks or any vehicles with room going in the direction of the recycling center. If you backhaul, try to send as much as you can prior to demobilization so as not to interfere with the backhaul of supplies. The Forest Service is authorized to use government time and equipment to accomplish recycling but you can save resources by piggybacking on other transportation situations.

*** Will the local fire cache handle any recyclables?** Some fire caches have the ability to handle recyclables, some don't. Don't automatically assume they will. Check with the manager of the cache that is supplying the fire and see if they have the means to take any of the recyclables off your hands. They may already have arrangements with a recycler near the cache. If the cache will accept any recyclables, you need to find out from them the same info you would find out from a recycler--how they want them sorted and prepared.

5. Order Supplies - Many of the supplies you'll need are available from the fire cache through the supply unit. The list below is a list of options. What you'll need exactly will depend on what materials you'll be recycling, how they need to be prepared, and what your existing resources are. Find out how the garbage is being handled, what kinds of containers will be used, and where they will be placed.

Recyclable collections containers: There are a variety of containers that can be used for collections. What you choose may be dependent upon who is accepting the materials and how they want them transported, what the materials are, and what the garbage containers will look like. Try to avoid using the same containers garbage will go in so people don't confuse them. You want your recycling containers to be easily identifiable. If you do use the same containers as garbage, you'll need to make your recycling containers stand apart and be very noticeable (see "Establish Collection Sites" below).

The following items are choices for containers:

- Large plastic bags
- Garbage cans, 32 gal.
- Cardboard boxes
- Aluminum frame garbage bag holder
- 5 gal. plastic bucket w/lid for batteries (IF recyclable--see p.9 for details)
- 55 gallon drums for cooking grease

The plastic bags are a must to line containers with. Keep in mind that when the containers are full, a person should be able to lift out a bag full of materials safely and without too much difficulty, or be able to move the entire container to a transportation area.

Other Supplies:

- Gloves: heavy duty rubber gloves for handling food and drink-contaminated items, work gloves for paper and cardboard.
- Strapping tape

-Flagging (bright colors)
- Felt tip markers

Optional if available:

- Utility/razor knife and blades
- portable baler to compact cardboard
- Staple hammer (or find people with big feet!)
- Twine
- free standing sink unit (approx. 20"x20"x16") for rinsing large food cans (see details in Appendix C).
- Stencils
- Heavy duty can opener
- Sign materials (cardboard, used paper)

6. Establish the collection facilities .

Locations: Collection facilities need to be next to most garbage cans and in convenient areas. Make it as easy to recycle as it is to throw things away. If people have to seek out a special place to recycle, they may be less inclined to do it. Locations to consider are:

- by the food or kitchen unit,
- near eating areas,
- in crew camp areas, near showers
- at crew arrival and drop points,
- at spike camps
- in convenient places throughout the incident base.

Many recyclables will be generated near the food unit. If recycling is not in the caterer's contract, you'll need to supply collection containers near the cooking facility, preferably near a sink where large food cans can be rinsed if necessary (see Appendix C on recycling at kitchens).

Don't forget spike camps and heliports. If they're large enough to provide full meals, there will probably be juice cans or aluminum to recycle. Find out what recyclables might end up there and send some boxes or bags and a person with information out there.

Containers: It is very important that recycling collection containers are very visible, and distinguishable from garbage cans. Make signs with very large letters for each container indicating which items can and can not go in (This information you will find out from who ever is processing the recyclables). For example:

ALUMINUM CANS ONLY
Please empty first
No small tin juice cans
No garbage

WHITE PAPER ONLY
Please remove post-its, tape, paper clips
Staples OK
No colored paper
No newspaper

The above examples are just examples. Since the markets for recyclables vary from town to town and state to state, you always have to determine what is accepted and how it should be prepared with every new location. Place identifying labels on all sides of the container and consider posting a sign at eye level by attaching it to a piece of lattice or a cardboard tube.

If you have containers that are similar to or look like regular garbage cans, consider taping flagging in a star or tic-tac-toe pattern across the opening to make people look more closely at at the container before tossing something in it. A piece of cardboard with a hole the size of a can cut in it will help keep garbage out of the aluminum can container.

Informing crews and personnel: Success of your program will rely a lot on how well people pay attention to the recycling facilities and whether they understand WHY the operation is set up in a particular way. You can get this information distributed in several ways:

1. Shift plans
2. Briefings
3. Bulletin boards
4. Post info near eating areas
5. Signs on bins
6. Talk to crews and camp personnel

If you make multiple copies of info about your recycling program, see if you can use paper that has already been printed on one side. Pieces of cardboard make good signs as well. If you have Hispanic crews, add the Spanish translation to your signs and flyers (see Appendix E for recycling messages and translations).

7. Designate personnel to help service bins and maintain operation safely.

Once the incident base camp is well established, camp crews can often assist with the maintenance of the recycling operation. Bins will need to be checked periodically to see that the correct items are being deposited in them and whether they are full. The most active times will likely be when crews are back from the line.

SAFETY IS THE NUMBER 1 PRIORITY! Before they start, it is very important that personnel servicing the bins are briefed on the safe handling of the materials and bins. Unless there is special equipment to transport heavy items (e.g forklifts or handtrucks) no bundle, bag or box should weigh more than 45 lbs--no more than 2 people should have to lift it. Personnel should wear rubber gloves when handling food or beverage containers and they should **NOT** dig through garbage cans to retrieve recyclables. Remind crews that there may be sharp edges on glass and cans. If medical waste is accidently placed in a recycling bin, there could be needles. All personnel servicing the bins should be instructed to look carefully in all containers before handling.

8. Identify opportunities for reuse of materials - If you have determined that a particular item can not be recycled locally and it's destined for the landfill, consider temporary reuse and ultimately abandonment as an option.

For example, AA batteries are used in King radios but often are not fully drained of their charge when the radio begins to fail to transmit. Some batteries can have as much as half of their energy left. These batteries can be used up for headlamps in camp (not fireline) situations, or other items that use AAs (as long as the lifespan of the batteries are understood by the user). If they can not be reused for government purposes and they are destined for the garbage can, use abandonment procedures to give them away to

anyone who wants them (**reference Federal Property Management Regulations 41 CFR 101-45.9 and document with Property Management Officer approval)**.

Other examples of items that can be reused or abandoned include large plastic food buckets, cubitainers, visqueen, etc.

9. Demobilize recycling supplies and personnel at end of incident - Arrange demobilization for personnel as workload decreases. At end of incident, ensure all reuseable supplies are returned to the supply unit. If the recycling program is to be transferred to the local agency at the close of the incident, work with the person who will be taking over Logistics to ensure they are informed.

APPENDIX A - General Information About Recycling

Recycling is more than sorting items out of your trash, in fact, that should be the last thing a person does to prevent waste from going to landfills and incinerators. There are 3 basic elements to recycling (symbolized by the "chasing arrows" symbol) and a 4th element that is an important part of closing the recycling loop:

1)REDUCE = Reduce waste at the source, cut back on disposable items.

2)REUSE = Reuse and repair items as many times as possible.

3)RECYCLE (REMANUFACTURE) = Make new items out of recyclable materials.

4)BUY RECYCLED PRODUCTS = When we purchase items made from recycled materials, we help create a demand for those items sorted from the waste stream. This is an area where the Federal Government can have a tremendous influence.

APPENDIX B: Recycling Within Government Property Management Regulations

When is something considered Government property (for which disposal requires action by a Property Management Officer) and when is it trash (for which disposal may lend itself to recycling rather than landfilling or incineration)? That is the question!

Everything bought by the Government with tax dollars is government property. This includes non-expendable equipment and expendable supplies. Until an item is abandoned as trash (i.e., thrown away), disposal is at the discretion of the local Property Management Officer (PMO). The PMO may advertise the item as excess property, donate it to State agencies as surplus, sell it, or use "abandonment" procedures (which consider scrap condition coding and costs of handling and/or storage). Procedural rules are found in the Federal Property Management Regulations (41 CFR 101) as supplemented by the Department and Forest Service.

Of the 3-R's that we preach, "reuse" is really a property matter. Therefore, items like videotapes, partially used batteries, and other items that we might be able to reuse in another way, should not be considered for recycling until we've consulted the PMO and followed the proper property management procedures. Recycling (collection for remanufacture into marketable products) only begins when the item is discarded and destined for the trash dumpster or garbage can. Our objective then becomes to salvage and conserve discarded resources and divert them from landfills or incineration.

When we have former Government property so discarded (or when we collect waste discarded by the public) and it is locally recyclable (i.e., there's a nearby recycler willing to accept/process it) we should collect and recycle it. Most items we typically think of recycling (e.g. paper, cardboard, glass, plastic, etc.) are not typically items that can be reused. Once an item is considered recyclable, follow the disposal steps under item #2 on page 1.

APPENDIX C - Recyclable Materials Collections

Quality Control Is Important - Items you collect for recycling are a commodity. If a recycler is going to sell that commodity to a manufacturer, the recycler (basically the "middle man") must have quality materials to make a profit. If the recycler receives materials that are contaminated with trash or mixed together with other items, he or she has to pay the cost of sorting the materials. Often a recycler won't accept materials that are contaminated or not sorted because they can't afford to sort them. That's why it's important that you find out from your recycler as many details as possible about the materials he or she will accept and how they should be prepared.

What Is Recyclable? - The list of things that can be recycled is bigger than most people realize. Unfortunately, what can be recycled in one area of the country is not necessarily recyclable in another. Some materials are recyclable, but aren't made into products because 1) consumers are not demanding those products so manufacturers aren't investing in production, or 2) manufacturers haven't tested the new products enough to be comfortable with mass production.

The following is a list of the materials that are most commonly recycled in the U.S. and some of the ways a recycler might want them prepared. **Again--how the materials should be prepared will be determined by the local recycler.**Rinsing recyclables is not always a requirement, however, it helps prevent pests, odors and the mess of spilled contents.

Aluminum Cans - Empty all liquid and any garbage inside; bag or box. Some recyclers want them crushed to reduce volume in transport, others want them left whole so they stick together when crushed for baling. Some small juice cans are steel cans, not aluminum, and they are more difficult to crush. If you're unsure, test the can with a magnet. A magnet will not stick to aluminum.

Other Aluminum - Aluminum foil and other products like pie plates are usually kept separate from cans. Scrap aluminum metal pieces like tent poles or lounge chair frames are also often kept separate.

Tin (steel) Cans - Since many of these are food cans, recyclers appreciate having them rinsed to keep pests and odors away. Some recyclers want both ends cut out and the cans flattened. Although the Steel Can Recycling Institute says you don't have to remove labels, many recyclers require that you do. Until the steel can industry convinces the recyclers otherwise, you may have to remove labels. Bag or box.

Glass - Food and beverage containers only (no light bulbs, window glass, etc.). Empty all contents, sort by colors (green, brown, clear), remove caps and lids. No need to remove labels. Some glass looks clear but is really a very light green. Check the bottom seam for any hint of a green color. Because glass markets have been so low, some recyclers only accept one or two colors. Bag or box and avoid breakage.

Plastic - There are seven different types of plastics that are identified by a number on the bottoms of plastic containers. Although many show the recycling arrows, not all of them are accepted for recycling. Plastics are divided into different types because each resin has its own properties such as specific melting temperatures and processing qualities. The most common plastics accepted are marked with an asterisk:

Types of Plastics

Code	Resin Type	Form
*1(PET)	Polyethylene Terephthalate	Soda and mineral water bottles, clear or colored
*2(HDPE)	High Density Polyethylene	Milk/water jugs, some shampoo, detergent, and auto oil bottles
3(V)	Polyvinyl Chloride	Food wrap and vegetable oil bottles.
4 (LDPE)	Low Density Polyethylene	Plastic grocery bags
5(PP)	Polypropylene	Food tubes and jar lids
6(PS)	Polystyrene	Styrofoam cups, plates, clear plastic cups
7(OTHER)	Other resins or multiple resin	

*Most common types of plastics recycled

Newspaper - Bundle, box, or bag--KEEP DRY. Newspaper is typically kept separate from other types of paper. Usually, anything that comes with the newspaper can be recycled with it (inserts, glossy ads, etc). Junk mail and catalogs that look like some of the inserts in the newspaper are usually not accepted with newspapers.

Office Paper - Box, bundle or bag--KEEP DRY. Some recyclers want paper sorted into white, colored, and computer (11"x14"), others will take it mixed. Some will accept envelopes. Most paper must be free of tape, post-it notes, paper clips, binders, glue, etc. Staples are usually OK. When the recycler's end result is to sell it to a high-grade recycled paper manufacturer, quality control is very important.

Cardboard - Corrugated cardboard boxes should be flattened and bundled--KEEP DRY. Some recyclers accept paperboard (the type of cardboard that cereal boxes and cases of pop (soda) cans are made of) but want it separated from corrugated cardboard.

Batteries - Whether batteries can be recycled depends on how many you have, what types they are, and where you are located. Although EPA has some requirements on how to properly dispose of batteries (see the individual battery descriptions below), state and local regulations may be more specific. Check with local solid waste disposal companies for state and local regulations. Some fire caches have accepted used batteries back in the past--check with the local cache to see if they will. The types of batteries typically encountered on incidents are:

- **Household type alkaline or carbon zinc** used for headlamps, flashlights, radios, etc. These are standard AA, A, C and D cell batteries. (See item 8, page 6 on reuse and abandonment options for batteries). If manufactured between 1989 and 1993, these batteries contain less than 0.25% mercury and are not considered hazardous waste by EPA. If manufactured prior to 1989, these batteries may have up to 1.0% mercury and may be classified as hazardous waste if you generate more than 100 kgs per month. Otherwise, the batteries may be landfilled. These batteries manufactured after 1993 contain no mercury and are not classified as hazardous waste.
- **Nickel-cadmium (NiCad)** rechargeable batteries used for flashlights, radios, etc. These tend to be difficult to dispose of because the cadmium content makes them hazardous waste if you generate more than 100 kgs per month or store more than 1000 kg on site. If used NiCads are sent to a battery manufacturer for regeneration, the batteries are not considered hazardous waste.
- **Lead acid** batteries used in vehicles: can usually be traded in when you purchase a new battery. Recyclers who deal in batteries will often pay for lead acid batteries. Lead acid batteries are

regulated as hazardous waste if disposed. If used lead acid batteries are recycled (and most retailers take back used for new), they do not have to be handled as hazardous waste. The same generation and storage limits apply for lead acid as they do for NiCads.

- **Motor Oil** - Drain into a plastic bucket with lid and take to local service station or facility that accepts used motor oil. Must not be mixed with any other fluids.

APPENDIX D - Recycling at the Camp Kitchen

How the food unit is organized will depend on the size of the incident. The smallest incidents may only have a camp kitchen that is supplied by local businesses. On larger incidents, caterers are contracted, sometimes locally and sometimes nationally. If the caterer is contracted locally, you may be able to work with the procurement unit to get recycling incorporated into the contract. The Food Unit Leader can help you determine how the catering will be arranged.

National contractors are required to provide recyclables separation capability but are not required to rinse. However, rinsing food cans is important to keep away pests and odors as the recyclables are processed.

The best way to handle recycling with caterers is to make it as easy for them as possible. It's easier and more logical for the caterer to coordinate their recycling with the camp's recycling system than if they attempted to do their own. Work with the caterer (maybe through the food unit leader or contracting officer representative) to see if they would be willing to rinse food cans. Some caterers are reluctant because they do not have the time and personnel to do it. If that is the case, see if they would allow camp crews to work on the food cans during slack hours. The other option is to try and order a separate sink unit as Tom Hayward has outlined below. If there is some way to pump the caterers grey water through this sink system to use only for rinsing, you can conserve the amount of clean water that's needed for rinsing.

<u>Camp Kitchen Recyclables</u>

The recyclable items that may be generated at a kitchen include:

* large steel food cans
* large plastic food bucket containers
* cooking grease/oil
* cardboard
* aluminum foil/dinner trays/pie plates
* plastic milk jugs (#2)
* aluminum cans

Tom Hayward of the Willamette NF in Oregon recommends the following supplies for recycling at a food unit:

- Free standing sink unit with grey water containment or piping adaptation to connect to caterer's grey water disposal. Sink should be big enough (20"X 20"X 16") to accommodate washing of large tin cans and have a drain board attached. Sink unit should also have 30-gallon water attached water supply or water available close by (from caterer). A 50-foot garden hose and nozzle can be attached to a pressure water system, when available, to spray out the food. Rinsing tin food cans is important to keep pests and odors out of the collections.

- 32 ounce container of dish washing liquid and plastic "scrubbies" to facilitate washing. Wire brush is handy also.
- Heavy duty can opener (non electric) either mounted on sink unit or table next to the sink unit. A hand model will work but is slower and harder on the hands.
- Heavy duty rubber gloves (4 pairs).
- Pocket knife to cut paper labels off tin cans and three "Exacto" knifes with replacement blades for breaking down cardboard boxes.

APPENDIX E - RECYCLING MESSAGES & INFORMATION

The more you can inform people at an incident about the recycling program and how it works, the more success you will have. Post information about the recycling program wherever you can: shift plans, bulletin boards, by recycling bins, in crew camps, by showers, in the food tent, etc. The following messages are examples for your use or for ideas:

"Help Conserve Resources By Recycling! This fire camp has a recycling program. The following materials can be recycled. Please prepare them as noted and place them in the labeled bins..."

"Did You Know This Camp Is Recycling?..."

Report Progress: "We've recycled xxx lbs. of cardboard, xxx lbs of aluminum cans, xxx lbs. of paper..." etc.

Recycling Messages in Spanish

We need to recycle = **Hay que reciclar** .

Recyclables only = **Solamente reciclables** .

We recycle = **Nosotros reciclamos**

No garbage = **Basura no**.

Pop (soda) cans = **Botes de aluminio**

Aluminum juice cans = **Botes de aluminio de jugo**

Tin cans = **Botes de lata**

Corrugated cardboard = **Carton acanalado**

Xerox paper = **Papel de Xerox (Papel de copiar)**

Plastic milk jugs = **Jarros de plastico de leche**

Glass = **Vidrio**

Plastic bottles = **Botellas de plastico**

Old plastic canteens = **Cantimploras viejas de agua**

Please separate juice cans from lunch garbage. = **Haga el favor de apartar los botes de jugo de la otra basura** .

We are recycling at this camp. = **En este campamento se recicla**.

Please put recyclables in the proper containers. = **Haga el favor de colocar los reciclables en los receptaculos apropiados** .

Please empty container before putting it in the bin. = **Haga el favor de vaciar los envases antes de meter en los receptaculos** .

Recycling Statistics

Here are some select statistics that can be used to inform people about the benefits of recycling:

America produces an average of over half a ton of garbage per person per year (about 3 1/2 lbs. a day). In a lifetime, the average American will throw away 600 times his/her weight in garbage--a 150 lb. adult will leave a legacy of 90,000 lbs. of trash for his/her children. Landfill sites are closing in the U.S. at the rate of one per day. However, recycling isn't just about saving landfill space. If it doesn't reduce pollution, energy consumption, and our use of natural resources, it's not effective recycling.

PAPER

*Paper takes up 40% of our landfill space--each ton of paper discarded fills 3.3 cubic yards. U.S. office workers discard more than 100 million tons of paper every year (enough to build a 12-foot high wall of paper from New York to Los Angeles).

*Every day in the United States, people use 187,000 tons (374,000,000 lbs.) of paper. For every 120 lbs. of paper you recycle, you save one tree.

*One Sunday edition of the New York Times consumes 60,000 trees. If we all recycled our Sunday papers, we could save 500,000 trees every week.

*Each ton of paper made from recycled fiber saves 17 trees, 4,100 kilowatts of energy, 7,000 gallons of water, and 60 pounds of air pollutants. One ton of post-consumer recycled paper saves enough energy to run the average home for six months.

OLD CORRUGATED CONTAINERS

*Commercially, old corrugated container recycling ranks highest. Sears, Wal-Mart, Home Depot, Target, and K-Mart alone recover nearly 1 million tons annually.

ALUMINUM

*Americans throw away enough aluminum every three months to rebuild our entire commercial air fleet. However, we do recycle about 60% of aluminum cans (1500 are recycled every second) and, thanks to recycling, over 5 million tons (4 1/2 metric tons) of aluminum have been saved from landfills since 1972. Reynolds Aluminum's 39 processing centers recycled over 531 million pounds of aluminum in 1992. Making cans from recycled aluminum cuts air pollution and energy use by 95% over making them from virgin ore.

*In 1988, recycling aluminum cans saved enough energy to supply the residential electric needs of New York City for six months--recycling 1 can saves enough energy to run a TV set for 3 hours.

*There is no limit to the number of times aluminum can be reused. The soda can you are drinking from today could have been part of someone else's 20 years ago--and could be part of someone else's 20 years into the future if you recycle it.

GLASS

*Using recycled glass means using up fewer natural resources. Although sand is plentiful, it still must be mined and transported (as must the lime and soda). These processes require energy and produce about 385 lbs. of mining waste for each ton of glass produced--this can be reduced by almost 80% when 50% recycled glass is used in the process. Additionally, glass produced from recycled glass instead of raw materials reduces air pollution by 20% and water pollution by 50%.

*The energy saved by recycling one glass bottle is enough to light a 100-watt bulb for four hours.

STEEL

*It takes about 4 times as much energy to make steel from virgin ore as it does to make the same steel from scrap--a mill using recycled scrap reduces related water pollution, air pollution, and mining wastes by about 70%.

*Americans use 100 million tin and steel cans every day--recycling them saves 74% of the energy used to produce them from raw materials. Each year we dump about 30 billion steel and tin cans into landfills, yet we've had the means to recycle these two materials for 60 years. Recycling and reusing the materials in "tin" cans reduces related energy use by 74%; air pollution by 85%; solid waste by 95%; and water pollution by 76%--yet only about 5% of "tin" cans are being recycled. Why?

PLASTICS

*Americans throw away enough plastic soda bottles in a year to circle the earth four times.

*It takes 1,050 recycled milk jugs to make a 6-foot plastic park bench.

LEAD

*Sixty percent of the world's lead supply comes from recycled car batteries.

OIL

*Americans throw away enough motor oil every year to fill 120 supertankers.

<u>For More Information</u>

The Recyclers Handbook, The Earth Works Group, 1990. Earth Works Press, 1400 Shattuck Ave., #25, Berkeley, CA 94709 (510)652-8533. $4.95

"Recycling Works!" EPA Office of Solid Waste, 401 M St. SW, Suite 2817, Washington DC 20460. (800)424-9346. Free brochure.

USDA Forest Service Waste Prevention and Recycling Operational Policy, 1994. Available from Paige Ballard, Waste Prevention and Recycling Program Manager (pballard/wo) or (703)235-3323.

Executive Order 13101, 1998. Available from Paige Ballard, Waste Prevention and Recycling Program Manager (pballard/wo) or (703)235-3323.

Federal Property Management Regulations (41 CFR 101-45). Available at most Forest Service or other Government offices.

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QUICK GUIDE TO

INCIDENT BASE RECYCLING

1. Determine if recycling is an option.

a. Check to see if local agency office has recycling program and coordinator. If not:
b. Are there recycling collection services available in the nearest local community (garbage contractor? commercial recycler?) If not, examine alternate methods ("abandon in place" to organizations, individuals).

2. Determine what items are recyclable and how they will be disposed.

a. Determine which items are "garbage" that are recyclable and which items are "reuseable government property." Work with a local Property Management Officer to make this determination and document it.
b. Follow these steps in order of preference to dispose of your materials:
1. Sell to a recycler
2. Give to recycler or organizations willing to take materials to recycling center.
3. Pay for recycling service.

3. Determine who will be responsible for recycling at the incident.

a. If there is not a local agency recycling coordinator assigned to the incident, the recycling coordinator will need to be assigned to the incident working for the Facilities Unit leader of the Logistics Group.

4. Determine what kinds of materials will be accepted, how they want them prepared, and how they will be transported.

a. Check with recycler on specific details of types of materials accepted and preparation requirements.
b. Find out if recycler will pick up recyclables or if we must haul materials to them.

5. Order supplies

a. Collection containers: Different from garbage cans, well labeled and marked.
b. Plastic bags for liners.

c. Gloves, heavy duty.
d. Strapping tape, flagging, twine
e. Markers, sign materials
f. Staple hammer, utility/razor knife
g. Heavy duty can opener

Optional:

Baler for cardboard
Sink for rinsing large food cans

6. Establish collection facilities
a. Near garbage cans
b. Food and Kitchen areas
c. Crew camps, showers
d. Crew arrival and drop off points
e. Spike Camps
f. Helibases, etc.

Inform crews and camp personnel

- Signs
- Shift Plans
- Briefings
- Bulletin boards

7. Designate personnel to service bins and maintain a safe operation.
a.Camp crew assistance
b.Safety, Safety, Safety!

8. Identify opportunities for reuse of materials.

9. Demobilize recycling supplies and personnel at end of incident.
a.Transfer remainder of operation to local agency.